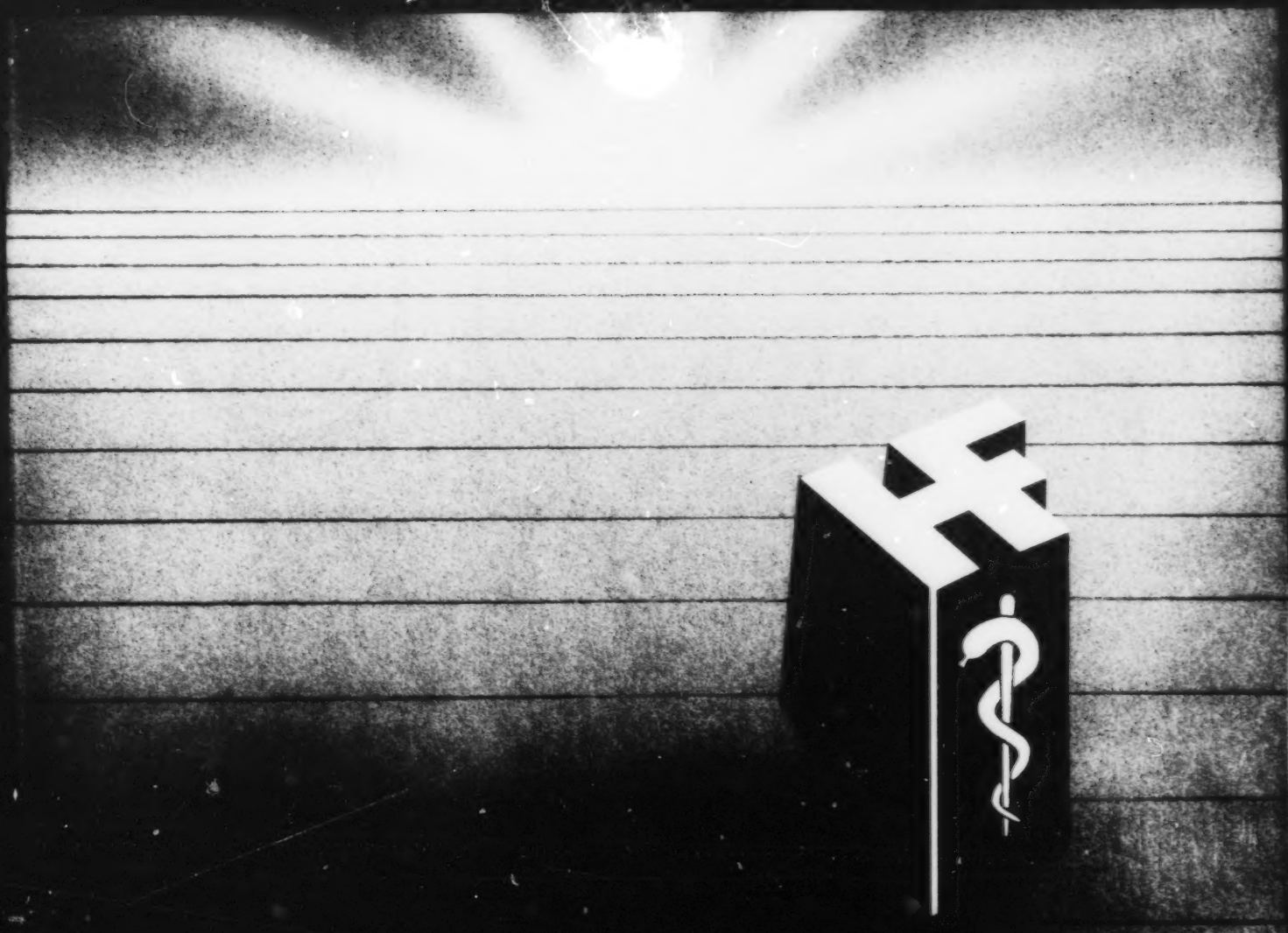
ALBERTA HERITAGE FOUNDATION

FOR MEDICAL RESEARCH

ANNUAL REPORT 1991/92



ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

ANNUAL REPORT 1991/92

93-02233/

THE ALBERTA HERITAGE FOUNDATION FOR MEDICAL RESEARCH

The Alberta Heritage Foundation for Medical Research supports medical researchers at the Universities of Alberta and Calgary. It was established in 1979 by the Government of Alberta with a $300 million endowment and operates on the investment earnings of the endowment.

In the last decade, the Foundation has contributed over $390 million directly to the Alberta medical research community. The majority of these funds supports scientists recruited from Canada and around the world. Other grants support young researchers in training. A special clinical research program encourages physicians to engage in research and another special program supports commercialization of medical innovations. For a listing of grants, see page 13.

For a more complete description of all the research funded, see the AHFMR bimonthly newsletter and the forthcoming 1993 Triennial Report.

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Edmonton company patents new vaccine for infection that commonly threatens the health and lives of hospitalized patients.

April 1991

AHFMR MISSION STATEMENT

We support a community of researchers who generate knowledge that improves the health and quality of life of Albertans and people throughout the world.

Our long-term commitment is to fund basic, patient and health research based on international standards of excellence and carried out by new and established investigators and researchers in training.

AHFMR PRINCIPLES

The AHFMR operates according to the following principles.

- Medical research based on international standards of excellence leads to improved health.
- Responsible stewardship of financial resources is necessary to ensure the continuance of the AHFMR for future generations.
- AHFMR holds a public trust and is accountable to the people of Alberta.
- Effective support of medical research requires collaboration among research institutions, granting agencies, governments and the private sector.
- Researchers require a supportive environment to achieve excellence in a highly competitive world of research.
- AHFMR requires autonomy and independence to be effective.

TERMS

Medical research is the search for new knowledge about the maintenance of health and the prevention and treatment of disease through the generation and testing of hypotheses. It is used here as a global term, encompassing the continuum from basic, fundamental laboratory-based research on molecules and biological systems, through patient and population-based health research, and includes research sometimes referred to as basic, applied, patient-based, clinical or health research.

THE CHAIRMAN'S LETTER

On behalf of the Trustees of the Alberta Heritage Foundation for Medical Research, I am pleased to present the twelfth Annual Report covering 1991-92 activities. This document contains the financial statements and the scientific statistics only, because a very comprehensive Triennial Report detailing the research activities will be published in 1993, with the report of the second International Board of Review to be conducted early in the year.

AHFMR has a history of success in supporting world-class medical research and our strategic planning process has given us a clear vision of how we can become even more successful. We are now in the process of exploring new programs for increased health research activity, increasing the flexibility of support for basic biological research, and forming new cooperative activity with other funding agencies.

The financial statements indicate we continue to be fiscally responsible to the people of Alberta. The Trustees have once again affirmed the wisdom of prudently balancing present and future budget needs. Today, we support a vital community of researchers with state-of-the-art labs while we return some of the interest on our endowment for our future health because medical research is a long-term investment.

May I draw your attention to two aspects of our funding program which are reflected in the statistics on our programs in this report. Note the hundreds of students we fund, including undergraduates. We are proud that we are providing young Albertans with opportunities for science careers, opportunities that did not exist before AHFMR support. This is part of our contribution to building Canada's human resource base for an improved economy. Secondly, and also related to the economy, our Technology Commercialization program has expanded to provide more support for Alberta innovators and entrepreneurs in universities and industry. Some of the news headlines in this report talk about the industrial activity supported by this funding program.

These news lines also reflect the ongoing progress AHFMR researchers are making in many areas of medical research. The trustees are excited and gratified to follow their discoveries, to see the calibre of new researchers we continue to attract to our province, and to note that those already here are receiving scientific honors and extensive funding from industry in recognition of their promising advances.

Alvin G. Libin
Chairman

The Trustees gratefully acknowledge Dr. Matthew Spence's strong leadership and the contributions of a dedicated staff. We also appreciate the counsel and cooperation of people in government and in the scientific, health care and business communities. Forwarding health through medical research is very much a cooperative business and AHFMR strives to be a partner with all the stakeholders. Given our past success, the high level of current activity and, most of all, the excellence of all the scientists we support, we will continue to be a leading partner.

Alvin G. Libin
Chairman

TRUSTEES

Alvin G. Libin
Calgary (Chairman)

Thomas K. Biggs
B.Sc., Coronation

Paul T. Davenport
B.A., M.A., Ph.D., President,
The University of Alberta

F. Murray Fraser
B.A., L.L.B., L.L.M., President,
The University of Calgary

Paul V. Greenwood
M.B., Ch.B., M.R.C.P.,
F.R.C.P.(C), Edmonton

Dorothy Horton
Sherwood Park
(Until April 1992)

Margaret L. Mrazek
R.N., B.Sc.N., M.H.S.A.,
L.L.B., Edmonton

Donald R. Seaman
B.Sc., Calgary

Peter Seland
M.D., F.R.C.P.(C)
Calgary
(Until April 1992)

Arthur Wilson
M.D., M.Sc., F.R.C.P.(C)
Edmonton

REPORT FROM THE PRESIDENT

"I skate to where I think the puck will be."

This remark, attributed to Wayne Gretzky, is a graphic example of strategic planning. In the past year, the Foundation, in consultation with concerned Albertans from a wide range of health-related institutions and organizations, considered where the Foundation should skate to provide the research activity on which tomorrow's health and well-being will be based. We have affirmed our commitment to fund medical research across the broad spectrum from molecules to the determinants of health of populations. Some of this diversity is illustrated in this report.

Dr. Matthew W. Spence, M.D., Ph.D.
President

We plan to remain an effective supporter of medical research in Alberta for our children, and for their children, and so we continue to not spend all of our investment income from the endowment, to ward off the ravages of inflation. This limits the dollars we can spend and is reflected in the bottom line of the financial statements in this report.

We remain committed to funding students in training, both new and established researchers in the province, and the ancillary programs essential to their success. Our forward commitment to this endeavour is considerable; our future commitments have risen from approximately $32.5 million in March, 1991, to $43.5 million in March 1992, a substantive testimony to our long-range support of medical research in the province.

These activities make for hectic and exciting times with heavy demands on dedicated Foundation staff and advisory committees.

The Foundation is not alone in strategic planning. Our province has been examining its future in the Toward 2000 initiative, and many other groups and institutions in the province are planning for tomorrow. Our colleagues in the federal and voluntary research-funding agencies are also examining their horizons. The only given seems to be that change will occur and, by sharing our plans and forming effective partnerships, we can position our organizations to "meet the puck" tomorrow.

This past year we continued to build the scientific community by awarding 58 new studentships and 38 new full-time fellowships. We also funded 15 new investigators in various fields at the Universities of Alberta and Calgary. Some have added more strength to the already outstanding groups in immunology, neurology, and arthritis and joint diseases. Others are forging new teams in fetal and newborn medicine.

We are also proud that the Heritage-funded investigators continue to make advances, receive accolades from peers, and attract millions of dollars in additional funding from other medical research agencies and from

industry. Details of their achievements and contributions to medical care will be reported in the detailed 1993 Triennial Report. Current information on research activities is also available in the AHFMR Newsletters.

Another part of the preparation for the future has been in the Foundation itself. There are new advisory committees for clinical applications, and for advice on priorities, programs and committee membership. Guided by the Scientific Advisory Council and the applications advisory committees, the number and variety of expert external reviewers available for consultation continues to grow. The computer systems which support these activities are being upgraded, and guidelines and application forms improved to ensure an equitable process and an informed review. Our financial management is becoming increasingly responsive and sensitive to the requirements of our partners.

None of this would be possible however, without the willing help of the scientific community, the dedication of the advisory committees and the Scientific Advisory Council, and the imagination and hard work of the Trustees, management and staff of the Foundation. You will put us where the puck will be. I thank you for the past and look forward to sharing the future.

Dr. Matthew W. Spence, M.D., Ph.D.
President

Dr. Irma Parhad discovers that spinal cord cells injured in Lou Gehrig's disease may be capable of regeneration. June 1991

SCIENTIFIC ADVISORY COUNCIL

The 12-member Scientific Advisory Council includes representatives from the national and international research communities. They review and advise the Foundation on major applications and policy decisions related to research. The members are:

Dr. **Matthew Spence**, President, Alberta Heritage Foundation for Medical Research

Dr. **Harold L. Atwood**, Professor and Chairman, Department of Physiology, University of Toronto, Toronto, Ontario

Dr. **John Bell**, Senior Lecturer, Institute of Molecular Medicine, John Radcliffe Hospital, Oxford, England

Professor **H. John Evans**, Director, MRC Clinical and Population Cytogenetics Unit, Western General Hospital, Edinburgh, Scotland

Dr. **Barry C. McBride**, Dean, Faculty of Science, University of British Columbia, Vancouver, British Columbia

Dr. **Jonathan Meakins**, Professor and Head, Department of Surgery, McGill University, Montreal, Quebec

Dr. **I. Barry Pless**, Professor of Pediatrics and Epidemiology, McGill University, Montreal, Quebec

Dr. **Daniel Porte, Jr.**, Associate Chief of Staff for Research and Development, Head, Division of Endocrinology and Metabolism, University of Washington, Seattle, Washington

Dr. **C. Prives**, Professor, Department of Biological Sciences, Columbia University, New York, New York

Dr. **Bishnu D. Sanwal**, Professor, Department of Biochemistry, The University of Western Ontario, London, Ontario

Dr. **René Simard**, Vice-President Academic and Research, Université de Montreal, Montreal, Quebec

Dr. **Gary L. Stiles**, Chief of Cardiology, Duke University Medical Center, Durham, North Carolina

AHFMR researchers Dr. James McGhee and Dr. Randy Read each receive 1 of 11 international awards from the prestigious Howard Hughes Medical Institute in the U.S.

June 1991

SELECTING THE SCIENTISTS

Researchers funded by the Foundation are recruited in cooperation with university personnel. The applicant and a faculty or department head submits an application to the Foundation for peer review. This means the application is judged and rated by internal and external reviewers. Applications are mailed to external reviewers with distinction in the applicant's field, then reviewed by a Foundation advisory committee which forwards recommendations to the Trustees. The following people served on these committees.

Dr. David Olsen's finding on maternal labor could help prevent premature birth.

May 1991

FELLOWSHIP COMMITTEE

Dr. R. Auer, Faculty of Medicine (Pathology), U of C
Dr. R.C. Bleackley, Faculty of Medicine (Biochemistry), U of A
Dr. S. Coupland, Faculty of Medicine
(Pediatrics, Clinical Neurosciences & Surgery), U of C
Dr. J. Ginsberg, Faculty of Medicine (Endocrinology), U of A
Dr. T. Louie, Faculty of Medicine
(Microbiology & Infectious Diseases), U of C
Dr. K. MacCannell, Faculty of Medicine
(Pharmacology & Therapeutics), U of C
Dr. T. Montague, Faculty of Medicine (Cardiology), U of A
Dr. J.C. Vederas, Faculty of Science (Chemistry), U of A
Dr. J. Wallace, Faculty of Medicine (Medical Physiology), U of C

MAJOR EQUIPMENT COMMITTEE

Dr. A. French, Faculty of Medicine (Physiology), U of A
Dr. G. McFadden, Faculty of Medicine (Biochemistry), U of A
Dr. J. Meddings, Faculty of Medicine (Internal Medicine), U of C
Dr. J. Raymond, Faculty of Social Sciences (Psychology), U of C
Dr. L. Reha-Krantz, Faculty of Medicine (Genetics), U of A
Dr. P. Schnetkamp, Faculty of Medicine (Medical Biochemistry), U of C
Dr. H. ter Keurs, Faculty of Medicine
(Medicine & Medical Physiology), U of C

SCHOLARSHIP COMMITTEE

Dr. P. Armstrong, Faculty of Medicine (Cardiology), U of T
Dr. J. Friesen, Research Institute, Hospital for Sick Children
Dr. M. Huff, Robarts Research Institute, U of WO
Dr. T. Lo, Faculty of Medicine (Biochemistry), U of WO
Dr. R. Miller, Ontario Cancer Institute
Dr. J. Mortola, Faculty of Medicine (Physiology), McGill
Dr. D. Van der Kooy, Faculty of Medicine (Anatomy), U of T
Dr. J. Wright, Manitoba Institute of Cell Biology, U of M

SCHOLARSHIP RENEWAL COMMITTEE

Dr. J. Ciriello, Faculty of Medicine (Physiology), U of WO
Dr. J. Diamond, Faculty of Medicine (Neurosciences) McMaster
Dr. H.J. Guyda, Faculty of Medicine (Endocrinology), Montreal Children's Hospital
Dr. G. Mills, Faculty of Medicine (Obstetrics & Gynaecology & Immunology), Toronto General Hospital
Dr. J. McGhee, Faculty of Medicine (Medical Biochemistry), U of C
Dr. B. Smith, Department of Neonatology, Hospital for Sick Children
Dr. L. Tyrrell, Faculty of Medicine (Medical Microbiology & Infectious Diseases), U of A

STUDENTSHIP COMMITTEE

Dr. W.A. Bridger, Faculty of Medicine (Biochemistry), U of A
Dr. D. Brindley, Faculty of Medicine (Biochemistry), U of A
Dr. W. Gallin, Faculty of Science (Zoology), U of A
Dr. R. Hawkes, Faculty of Medicine (Anatomy), U of C
Dr. M. Hulliger, Faculty of Medicine (Clinical Neurosciences & Med. Physiology), U of C
Dr. R. Johnston, Faculty of Medicine (Biochemistry), U of C
Dr. J. Lander, Faculty of Nursing, U of A
Dr. R.B. Scott, Faculty of Medicine (Pediatrics), U of C

CLINICAL COMMITTEE

Dr. S. Asa, Faculty of Medicine (Pathology), U of T
Dr. R. Hobkirk, Faculty of Medicine (Biochemistry), U of WO
Dr. E.B. Marliss, McGill Nutrition and Food Science Centre
Dr. D.S. Rosenblatt, Faculty of Medicine (Medical Pediatrics and Human Genetics), McGill
Dr. E. Skamene, Montreal General Hospital
Dr. A. Zipursky, Faculty of Medicine (Haematology and Oncology), U of T

AHFMR awards Calgary company $500,000 to launch a prosthesis manufacturing system on the multimillion-dollar world market.

July 1991

AWARD PROGRAMS

Diabetic Marg Heayn celebrates one year free of insulin therapy after AHFMR team transplanted insulin-producing islet cells.

July 1991

HERITAGE MEDICAL SCIENTIST AWARDS

This award encourages the recruitment and establishment of senior medical scientists to Alberta. Heritage Medical Scientists are leaders in their fields and are internationally recognized for their scientific contributions. The award is for five years and is renewable.

SCHOLARSHIPS

Heritage Medical Scholars are investigators recently trained in medical research who have demonstrated promise and ability to initiate and conduct independent research. A five-year, renewable Scholarship allows scientists to develop medical research unhampered by heavy teaching and service duties.

CLINICAL INVESTIGATORSHIPS

Clinical Investigatorships give clinically qualified medical scientists holding full-time academic appointments further research training and experience, assisted by competitively-funded basic or clinical researchers. Clinical investigators must have an M.D. or D.D.S., have completed clinical specialty training and two or three years of supervised medical research. The three-year award may be extended for three years, but is not renewable.

INDEPENDENT ESTABLISHMENT GRANTS FOR NEW INVESTIGATORS

Independent Establishment Grants are given to new investigators who are not funded by the Foundation. The grant helps them quickly achieve maximal research productivity by providing equipment, technical assistance, and materials.

FELLOWSHIPS

Heritage Medical Research Fellowships provide qualified candidates with full-time postdoctoral training in research in an area of medical science relevant to the aims of the Foundation. Fellows must have an M.D., D.D.S., D.V.M., Ph.D., or Pharm.D., and must demonstrate high academic standing and evidence of research ability.

CLINICAL FELLOWSHIPS

Clinical Fellowships give individuals who have completed clinical training an opportunity to gain supervised medical research experience. Applicants must have a medical or dental degree and have completed subspecialty clinical training. The one-year award may be renewed three times.

STUDENTSHIPS

There are a limited number of full-time Studentships for students registered in full-time M.Sc. or Ph.D. programs, and who plan careers in medical research. A limited number of part-time Studentships are available to students working toward professional health-related degrees. Summer Studentship awards support promising Alberta university students from May to August.

TECHNOLOGY COMMERCIALIZATION GRANTS

The Technology Commercialization Program provides an opportunity for Alberta medical researchers or engineers to promote university/industrial collaboration in Alberta, stimulate technological innovation in Alberta, and advance medical research to the stage where private investors may provide seed capital.

Phase I funding enables applicants to strengthen the technical merit and explore the feasibility of a scientifically sound project. Phase II funding applies when a product or technique has been identified and laboratory-tested but

requires further investigation and refinement to attract seed/venture capital. Phase III funding comes under the Alberta Medical Innovations Plan, funded by federal transfer grants of $9.3 million over five years. Funding of up to $500,000 supports prototype development, market research, development of production methods, start-up manufacturing and clinical trials.

VISITING SCIENTISTS

Awards for Visiting Scientists to Alberta enable a limited number of highly innovative and productive medical scientists to engage in medical research in an Alberta university to bring their special knowledge and expertise to the host institution. Awards for Visiting Scientists from Alberta enable Albertans to undertake collaborative research that they are unable to undertake locally due to inadequate technology or collegial expertise.

CONFERENCE GRANTS

The Foundation supports a limited number of conferences and workshops clearly related to the enhancement of medical research in Alberta and the transmission of significant new knowledge to those who care for patients.

VISITING LECTURERS

The Visiting Lecturer program helps Alberta universities attract outstanding medical scientists who can broaden and enrich the educational experience of graduate students and fellows. The program also gives Alberta investigators opportunities to discuss their research with others in their field.

TRAVEL GRANTS

The Foundation annually gives Travel Grants to the U of A and the U of C to be administered by the Universities to faculty for: attending workshops, conferences, and annual meetings; recruiting researchers; briefly visiting other laboratories to study new techniques or discuss collaborations.

VISITING PROFESSORS

Heritage Medical Research Visiting Professorships are available to attract outstanding medical scientists to visit Alberta to enrich the climate of medical research.

GRANTS FOR MAJOR EQUIPMENT

Major Equipment Grants and equipment maintenance funds permit the university, on behalf of investigators, to purchase and maintain equipment essential to high-quality research. Applications usually relate directly to research projects supported by competitive granting agencies. Preference is given to expensive facilities providing support to groups of researchers and multi disciplinary projects, especially those facilities offering services to researchers with partial or full recovery arrangement for operating costs.

INSTITUTIONAL GRANTS

Institutional Grants to the universities cover some of the costs associated with an influx of AHFMR scientists and include items such as renovations, recruiting costs, support staff, library grants, and special initiative grants.

AHFMR funds successful Suicide Prevention Program being marketed world-wide.

September 1991

HERITAGE MEDICAL SCIENTISTS

U of A researcher shows flu vaccines for the elderly save lives.

October 1991

ALLEN, Peter, Ph.D., Department of Applied Sciences in Medicine, Faculty of Medicine, University of Alberta "In-Vivo NMR Research Facility"

***ANDREWS**, Brian, Ph.D., Department of Applied Sciences in Medicine, Faculty of Medicine, University of Alberta "Applied Neural Control"

* **BLEACKLEY**, Robert, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "A Molecular Analysis of Cell-Mediated Cytotoxicity, Bench to Bedside"

BRINDLEY, David, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Control of Glycerolipid and Lipoprotein Metabolism"

FIELD, L. Leigh, Ph.D., Department of Pediatrics, Faculty of Medicine, University of Calgary "Genetic Analysis of Several Common Multifactorial Diseases"

GILES, Wayne, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Electrophysiology-Pharmacology of Cardiac Cells"

GRIFFITHS, Derek, Ph.D., Department of Applied Sciences in Medicine, Faculty of Medicine, University of Alberta "Urodynamics"

HULLIGER, Manuel, Ph.D., Departments of Clinical Neurosciences and Medical Physiology, Faculty of Medicine, University of Calgary "Peripheral Control of Voluntary Movement"

JIMBOW, Kowichi, M.D., Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "Melanogenesis, and Laboratory Diagnosis and Rational Therapy of Malignant Melanoma"

JUGDUTT, Bodh, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Modification of Ventricular Geometry and Function after Myocardial Infarction: Effect of Nitroglycerin & Age-Inhibitor"

MARTIN, Renee, Ph.D., Department of Pediatrics, Faculty of Medicine, University of Calgary "Cytogenetic and Molecular Analysis of Human Sperm"

McGHEE, James, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Gene Expression During Animal Development"

* **McFADDEN**, Grant, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Studies on the Replication and Biology of Leporipoxviruses"

PATERSON, Malcolm, Ph.D., Department of Medicine, Cross Cancer Institute "Clinical Genetics and Molecular Carcinogenesis"

PAUL, Leendert, M.D., Ph.D., Department of Medicine, Faculty of Medicine, University of Calgary "Organ Transplant: Clinical and Experimental Research"

PITTMAN, Quentin, Ph.D., Department ofMedical Physiology, Faculty of Medicine, University of Calgary "Hypothalamic Control of Autonomic and Endocrine Function"

* **PROCHAZKA**, Arthur, Ph.D., Department of Physiology, Faculty of Medicine, University of Alberta "Neural Control of Movement"

RABINOVITCH, Alexander, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Immunobiology of Diabetes Mellitus"

REMMERS, John, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Control of Breathing in Health and Disease"

** **SCHNEIDER**, Wolfgang, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Receptor-Mediated Endocytosis in Oocytes"

SINGH, Bhagirath, Ph.D., Department of Immunology, Faculty of Medicine, University of Alberta "Molecular and Functional Analysis of T-Cell Antigen Interactions"

* **TAYLOR**, Diane, Ph.D., Department of Medical Microbiology and Infectious Diseases, Faculty of Medicine, University of Alberta "Genetic Studies of Bacterial Plasmids, *Campylobacter* and *Helicobacter*"

TER KEURS, Henk, M.D., Ph.D., Departments of Medicine and Medical Physiology, Faculty of Medicine, University of Calgary "Control of Cardiac Function in Normal and Diseased Myocardium"

TYBERG, John, M.D., Ph.D., Departments of Medicine and Medical Physiology, Faculty of Medicine, University of Calgary "Left Ventricular External Constraint, Venous Capacitance"

VANCE, Dennis, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Phospholipid and Lipoprotein Metabolism"

WANG, Jerry, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Studies in Cell Regulation"

YOON, Ji-Won, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Role of Viruses and Autoimmunity in the Pathogenesis of Insulin-Dependent Diabetes Mellitus"

YOUNG, James, Ph.D., Department of Physiology, Faculty of Medicine, University of Alberta "Molecular Mechanisms of Membrane Transport"

* New appointments 1991/92
** Cancelled

HERITAGE CLINICAL INVESTIGATORS

BERTHIAUME, Yves, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Mechanisms of Alveolar Liquid Clearance"

BRAY, Robert, M.D., Department of Surgery, Faculty of Medicine, University of Calgary "Revascularization and Ligament Healing"

* **BROWN**, Christopher, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Structure/Function of Granulocyte-Macrophage Colony-Stimulating Factor and its Receptor"

BUTZNER, J. Decker, M.D., Department of Pediatrics, Faculty of Medicine, University of Calgary "Chronic Protein-Calorie Malnutrition in the Developing Infant: Alterations in Intestinal Mucosal Development Function"

CHIK, Constance, M.D., Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "The Pineal Gland: a Model for Ethanol Action on Neuroendocrine Function"

COCKFIELD, Sandra, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "The Regulation of Interferon-T and other Cytokines In Vivo"

COE, James, M.D., Department of Pediatrics, Faculty of Medicine, University of Alberta "Pharmacological Manipulation of the Neonatal Circulation"

FEDORAK, Richard, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Adaptation and Regulation of Intestinal Glucose Transport"

FLETCHER, William, M.D., Department of Clinical Neurosciences, Faculty of Medicine, University of Calgary "Visual Motor Dysfunction with Frontal Lobe Lesions"

GILLIS, Anne, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Myocardial Kinetics and Pharmacodynamics"

GRUNDY, Paul E., M.D., Department of Molecular Genetics and Carcinogenesis Laboratory, Cross Cancer Institute "Molecular Genetics of Wilms' Tumor"

HO, May, M.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Immunoregulation in *P. Falciparum* Malaria"

KAVANAGH, Katherine, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Mechanisms of Cardiac Defibrillation and Cardioversion"

* **KIMBERLEY**, Barry, M.D., Ph.D., Department of Surgery, Faculty of Medicine, University of Calgary "Mechanisms of Auditory Dysfunction"

KNETEMAN, Norman, M.D., Department of Surgery, Faculty of Medicine, University of Alberta "Islet Isolation, Immunodulation & Immunosuppression"

KUNIMOTO, Dennis, M.D., Department of Medical Microbiology and Infectious Diseases, Faculty of Medicine, University of Alberta "IgA Regulation"

LEE, B. Craig, M.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "The Role of Iron Acquisition in the Pathogenesis of *Gonococcal* Infection"

LEE, Samuel, M.D., Department of Internal Medicine, Faculty of Medicine, University of Calgary "Pathophysiology of Portal Hypertension"

U of A team begins study to see if drugs will decrease the chance of coronary artery disease in people who have lower levels of cholesterol but are still at risk.

November 1991

LIEN, Dale, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Neutrophils in Airway Inflammation"

LUCAS, Alexandra R., M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Spectroscopic Investigation of Atherosclerotic Plaque Development"

* **MAKSYMOWYCH**, Wolodymyr, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "T-Cell Antigen Receptor Genes in Rheumatoid Arthritis"

MEDDINGS, Jonathan, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Physiology of Intestinal Permeability"

MODY, Christopher H., M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Antimicrobial Defense Mechanisms of the Lung in CD 4 (T-Helper/Inducer) Cell Deficiency"

** **PARFREY**, Nollaig, M.D., Departmentof Pathology, Faculty of Medicine, University of Alberta "Immune Mechanisms in Self Tolerance and Autoimmunity"

TEO, Koon, Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "Clinical Trials in Cardiovascular Diseases"

TRANMER, Bruce, M.D., Department of Clinical Neurosciences, Faculty of Medicine, University of Calgary "The Role of Hypervolemic Hemodilution During Cerebral Ischemia"

TREDGET, Edward, M.D., Department of Surgery, Faculty of Medicine, University of Alberta "Collagen Metabolism In Vivo"

VAN AERDE, Johny, M.D., Department of Pediatrics, Faculty of Medicine, University of Alberta "Fat Utilization in Parenterally Fed Newborn Infants"

WATSON, Timothy W., M.D., Ph.D., Department of Clinical Neurosciences, Faculty of Medicine, University of Calgary "Somatostatin Actions in the In Vitro Striatal Slice"

WOODMAN, Richard, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Identification and Functional Characterization of Neutrophil Antibodies and Associated Antigens"

* New appointments 1991/92

** Cancelled

** **ACHESON**, Ann, Ph.D., Department of Anatomy and Cell Biology, Faculty of Medicine, University of Alberta "Role of Cell Adhesion in Neurotransmitter Phenotypic Expression"

HERITAGE MEDICAL SCHOLARS

ANDERSON, M. John, Ph.D., Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Calgary "Mechanisms of Nerve-Muscle Interaction"

ANDERSON, Robert, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Membrane Structure, Function and Response to Cell-Killing Activities"

AUER, Roland, M.D., Ph.D., Department of Pathology, Faculty of Medicine, University of Calgary "Excitotoxicity in Ischemia and Related Conditions"

BARNES, Steven, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Mechanisms of Synaptic Interaction Among Photoreceptors of the Vertebrate Retina"

BAZETT-JONES, David, Ph.D., Departments of Anatomy and Medical Biochemistry, Faculty of Medicine, University of Calgary "Structure of the Transcription Complex."

BEFUS, Dean, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Mast Cell Biology: Neuroimmunology and Mucosal Immunity in Parasitic Infections"

BENISHIN, Christina, Ph.D., Department of Physiology, Faculty of Medicine, University of Alberta "Presynaptic Modulation of Potassium Channels"

BERDAN, Robert, Ph.D., Department of Physiology, Faculty of Medicine, University of Alberta "Formation and Function of Electrical Synapses"

BOWLING, Douglas, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Sublaminar Organization in the Lateral Geniculate Nucleus"

BULLOCH, Andrew, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Control of Neurite Outgrowth by Adult Neurons"

CAMPENOT, Robert, Ph.D., Department of Anatomy and Cell Biology, Faculty of Medicine, University of Alberta "Control of Nerve Fiber Growth and Survival by Ions, Pharmacological Agents and Electrical Activity"

CLANDININ, Michael, Ph.D., Departments of Foods and Nutrition and Dietary Medicine, Faculties of Home Economics and Medicine, University of Alberta "Nutrition and Metabolism of Diet Fat"

CODDING, Penelope, Ph.D., Departments of Chemistry and Pharmacology and Therapeutics, Faculties of Science and Medicine, University of Calgary "Molecular Structure and Function Studies of CNS Active Drugs and Toxins"

COLMERS, William, Ph.D., Department of Pharmacology, Faculty of Medicine, University of Alberta "Neuromodulation in CNS"

DAY III, Rufus, Ph.D., Department of Medicine, Cross Cancer Institute "DNA Repair and Gene Regulation in Human Tumor Systems"

DUFF, Henry, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Mechanistic Approach to Antiarrhythmic Therapy"

DUNN, Susan, Ph.D., Department of Pharmacology, Faculty of Medicine, University of Alberta "Mechanisms of GABAergic Neurotransmission"

EASTON, Paul, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Hypoxia, Respiratory Muscles and Ventilatory Control"

EDWARDS, Dylan, Ph.D., Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Calgary "Growth Factor Control of Gene Regulation"

EGGERMONT, Jos, Ph.D., Department of Psychology, Faculty of Social Sciences, University of Calgary "Maturation of Neural Interaction in the Cortex"

ELLIOTT, John, M.D., Ph.D., Department of Medical Microbiology and Infectious Diseases, Faculty of Medicine, University of Alberta "Cloning of Genes for Malaria Surface Antigens by Eukaryotic Expression"

FAMIGLIETTI, Edward, M.D., Ph.D., Department of Anatomy, Faculty of Medicine, University of Calgary"Functional Architecture of Vertebrate Retina"

FEWELL, James, Ph.D., Departments of Obstetrics and Gynecology and Medical Physiology, Faculty of Medicine, University of Calgary "Cardio-respiratory Control During Sleep"

FINEGOOD, Diane, Ph.D., Departments of Medicine and Physiology, Faculty of Medicine, University of Alberta "Hepatic Insulin Action and Insulin Resistance"

FLIEGEL, Larry, Ph.D., Department of Pediatrics, Faculty of Medicine, University of Alberta "Ion Exchangers of Heart Sarcolemma"

FRANK, Cyril, M.D., Ph.D., Department of Surgery, Faculty of Medicine, University of Calgary "Connective Tissue (Ligament) Structure, Function and Homeostasis"

FRENCH, Robert, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Ionic Channels in Excitable Membranes"

FRITZLER, Marvin, Ph.D., M.D., Departments of Medicine and Medical Biochemistry, Faculty of Medicine, University of Calgary "Autoimmunity in Rheumatic Diseases"

FUJITA, Donald, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Control of Oncogene Activity"

GALLIN, Warren, Ph.D., Department of Zoology, Faculty of Science, University of Alberta "Cellular Mechanisms of Development"

More AHFMR researchers join renowned U of C team discovering how genes begin the cancer process.

May 1991

Dr. Tony Schryver has promising candidate for a better meningitis vaccine.

January 1992

GARBER, Anthony, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "The Molecular Biology of Psoriasis"

GELLMAN, Reuben, Ph.D., Departments of Clinical Neurosciences and Medical Physiology, Faculty of Medicine, University of Calgary "Processing of Oculomotor Signals in the Cerebellum"

GODBOUT, Roseline, Ph.D., Department of Molecular Genetics, Cross Cancer Institute "Molecular Genetics of Retinal Development"

GORDON, Tessa, Ph.D., Department of Pharmacology, Faculty of Medicine, University of Alberta "Neuromuscular Plasticity"

** **GREEN**, Douglas, Ph.D., Department of Immunology, Faculty of Medicine, University of Alberta "Immunoregulatory T-Cells and Molecules"

GREENSHAW, Andrew, Ph.D., Department of Psychiatry, Faculty of Medicine, University of Alberta "Beta-Phenylethylamine, p-Tyramine and p-Octopamine and the Treatment of Affective Disorders"

* **GREER**, John, Ph.D., Department of Physiology, Faculty of Medicine, University of Alberta "Development of Neuronal Mechanisms Controlling Breathing"

HART, David, Ph.D., Departments of Medicine and Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Role of Plasminogen Activators and their Inhibitors"

HAYNES, Lawrence, Ph.D., Departmentof Medical Physiology, Faculty of Medicine, University of Calgary "Properties of the cGMP-gated Channel of Vertebrate Rods and Cones"

** **HOFFER**, J. Andy, Ph.D., Departments of Medical Physiology and Clinical Neurosciences, Faculty of Medicine, University of Calgary "Neural Control of Movements"

HULBERT, William, Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "Mechanisms of Acute Airway Injury and Repair: Physiology, Morphology, Cell Biology"

IATROU, Kostas, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "The Organization, Expression and Evolution of Eukaryotic Multigene Families in Chorion of *Bombyx Mori*"

JACOBS (KAUFMAN), Susan, Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "Control Mechanisms of Fluid and Electrolyte Balance"

** **JENSEN**, Susan, Ph.D., Department of Medical Microbiology and Infectious Diseases, Faculty of Science, University of Alberta "Biosynthesis of Novel Penicillin and Cephalosporin Antibiotics"

* **KANE**, Kevin, Ph.D., Department of Immunology, Faculty of Medicine, University of Alberta "Molecular Interactions Governing Cytotoxic T-Cell Recognition and Transmembrane Signalling"

KARGACIN, Gary, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "StructuralProperties of Contracting Smooth Muscle"

KING, Malcolm, Ph.D., Department of Medicine, Faculty of Medicine, University of Alberta "Studies on Mucus Secretion and Clearance"

KOOPMANS, Henry, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Internal Control of Energy Balance"

* **KUBES**, Paul, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Polymorphonuclear Leukocyte-Endothelial Cell Interactions: The Role of Nitric Oxide"

Dr. Robert Hayward develops a computer program to help doctors sort out treatment options for individual patients.

February 1992

LAFRENIERE, Rene, M.D., Department of Surgery, Faculty of Medicine, University of Calgary "Adoptive Immunotherapy of Tumors with Activated Lymphocytes and Biological Response Modifiers"

LEE, Patrick, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "The Mechanism of Virus Attachment of Host Cells"

** **LEE**, Timothy, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Protective Immunity of Nematode Infection"

* **LESKIW**, Brenda, Ph.D., Department of Microbiology, Faculty of Medicine, University of Alberta "The BldA Gene and its Role in Antibiotic Production and Morphological Differentiation"

LOPASCHUK, Gary, Ph.D., Department of Pediatrics and Pharmacology, Facultyof Medicine, University of Alberta "Fatty Acid Metabolism in the Heart"

MacVICAR, Brian, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Synaptic and Non-Synaptic Mechanisms Controlling Neuronal Excitability"

MAINS, Paul, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Molecular and Genetic Analysis of C. elegans Embryogenesis"

MANTLE, Michele, Ph.D., Departments of Medical Biochemistry and Pediatrics, Faculty of Medicine, University of Calgary "Intestinal Mucin : Structure, Synthesis and Secretion"

MARTIN-IVERSON, Mathew, Ph.D., Department of Psychiatry, Faculty of Medicine, University of Alberta "Behavioral Functions of Dopamine Receptor Subtypes: Animal Models of Schizophrenia, Parkinson's Disease"

MICHALAK, Marek, Ph.D., Departments of Pediatrics and Biochemistry, Faculty of Medicine, University of Alberta "Ca Transport systems in Mature and Developing Heart"

MILLER, Freda, Ph.D., Department of Anatomy and Cell Biology, Faculty of Medicine, University of Alberta "Molecular Analysis of Neuronal Development"

MITCHELL, L. Brent, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Prophylactic Therapy for Ventricular Tachyarrhythmias"

MOORE, Graham, Ph.D., Department ofMedical Biochemistry, Faculty of Medicine, University of Calgary "Peptide Hormones and Cardiovascular Disease"

NEWMAN, Stephen, M.D., Department of Psychiatry, Faculty of Medicine, University of Alberta "Mortality of Affective Disorder Patients in Alberta"

* **OLSON**, David, Ph.D., Department of Obstetrics and Gynecology, Faculty of Medicine, University of Alberta "Eicosanoid Synthesis and Function in Perinatal Physiology"

* **OSTERGAARD**, Hanne, Ph.D., Department of Immunology, Faculty of Medicine, University of Alberta "CD45 Protein Tyrosine Phosphatase: Role in T Cell Activation"

PARHAD, Irma, M.D., Departments of Pathology and Clinical Neurosciences, Faculty of Medicine, University of Calgary "Neurofilament Gene Expression and Regulation in Neurofibrillary Degeneration"

PREIKSAITIS, Jutta, M.D., Departments of Medicine and Medical Microbiology and Infectious Diseases, Faculty of Medicine, University of Alberta "Cytomegalovirus and Epstein-Barr Virus Infection in Allograft and Transfusion Recipients : Epidemiology & Pathogenesis"

* **RASMUSSEN**, Colin, Ph.D., Department of Anatomy & Cell Biology, Faculty of Medicine, University of Alberta "Molecular Genetic Analysis of Calmodulin-Dependent Cell Cycle Control"

RATTNER, Jerome, Ph.D., Departments of Medical Biochemistry and Anatomy,Faculty of Medicine, University of Calgary "High Order Structure of Chromosomes"

AHFMR gives universities $1.5 million for quality of care patient research.

March 1992

READ, Randy, Ph.D., Department of Medical Microbiology and Infectious Diseases, Faculty of Medicine, University of Alberta "Protein Crystallography and Rational Design of Trypanocidal Drugs"

REHA-KRANTZ, Linda, Ph.D., Department of Genetics, Faculty of Science, University of Alberta "The Biochemical Basis of Mutation"

REYNOLDS, John, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Contribution of Peyer's Patches to the Immune System"

* **RIABOWOL**, Karl, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "The FOS Protein Complex in Transcription and Transformation"

RICE, Stephen, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Molecular Biology of a Herpes Simplex Virus Regulatory Protein"

RORSTAD, Otto, M.D., Ph.D., Department of Medicine, Faculty of Medicine, University of Calgary "Mechanisms of Action of Brain Peptides"

RYAN, Robert, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Hormone-Induced Diacylglycerol Transport and Metabolism"

SCHNETKAMP, Paul, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Molecular Components of Signal Transduction in Retinal Rods"

SCHRYVERS, Anthony, M.D., Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "The Receptors for Human Transferrin and Lactoferrin in *Neisseria meningitidis*"

SCHURCH, Samuel, Ph.D., Departments of Medicine and Medical Physiology, Faculty of Medicine, University of Calgary "Pulmonary Surfactant: Lung Stability and Particle Clearance, Cell Adhesion"

* **SCOTT**, R. Brent, M.D., Department of Pediatrics, Faculty of Medicine, University of Calgary "Intestinal Motility"

SEVERSON, David, Ph.D., Department of Pharmacology and Therapeutics, Faculty of Medicine, University of Calgary "Lipid Metabolism in Heart and Blood Vessels"

* **SHARKEY**, Keith, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "GI Afferent Nerves and Inflammation"

SIMINOSKI, Kerry, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Regulation of Nerve Growth Factor Activity"

SMITH, Peter, Ph.D., Department of Pharmacology, Faculty of Medicine, University of Alberta "Electrophysiological Studies of the Electrogenic Sodium Pump in Sympathetic Ganglia and Spinal Cord"

SNYDER, Floyd, Ph.D., Departments of Medical Biochemistry and Pediatrics, Faculty of Medicine, University of Calgary "Inherited Disorders of Nucleotide Metabolism"

SOKOL, Pamela, Ph.D., Department of Microbiology and Infectious Diseases, Faculty of Medicine, University of Calgary "Structure, Function and Regulation of *Pseudomonas Aeruginosa* Ferripyochelin Binding Protein"

SPENCER, Charlotte, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Transcription Initiation and Elongation in the Human C-MY-C-Oncogene"

STEVENSON, Bruce, Ph.D., Department of Anatomy and Cell Biology, Faculty of Medicine, University of Alberta "Molecular Dynamics of ZO-1 and the Tight Junction"

** **TETZLAFF**, Wolfgang, M.D., Ph.D., Department of Anatomy, Faculty of Medicine, University of Calgary "Gene Expression in Lesioned Neurons of the CNS and PNS"

* **TURNER**, Raymond, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Conditional Bursting Circuit in a Vertebrate Sensory System"

VOGEL, Hans, Ph.D., Department of Biochemistry and Biological Sciences, Faculty of Science, University of Calgary "NMR and the Regulation of Metabolism"

WAISMAN, David, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Identification and Regulation of Intracellular Calcium Binding Proteins"

WALLACE, John, Ph.D., Department of Medical Physiology, Faculty of Medicine, University of Calgary "Endogenous Mediators of GastrointestinalPathophysiology"

WALSH, Michael, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Second Messenger Control: Enzyme Regulation by Ca2+, Diacylglycerol and Cyclic Nucleotides"

AHFMR team announces the Kool-Aid test to detect silent and potentially fatal ulcers caused by chronic use of arthritis drugs.

March 1991

Study of Alberta farmers shows they generally have healthy lungs but are at risk for asthma.

June 1991

WENMAN, Wanda, M.D., Department of Pediatrics, Faculty of Medicine, University of Alberta "Human Infections with Chlamydia Trachomatis"

* **WARNOCK**, Garth, M.D., Department of Surgery, Faculty of Medicine, University of Alberta "Studies of the Isolation and Transplantation of Islets for Type I Diabetes"

WINDHORST, Uwe, M.D., Department of Clinical Neurosciences and Medical Physiology, Faculty of Medicine, University of Calgary "Integration of Recurrent Inhibition and Propriospinal Feedback"

WITKOWSKI, Francis, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Clinical and Basic Applications of Cardiac Electrical Mapping"

WONG, Norman, M.D., Department of Medicine, Faculty of Medicine, University of Calgary "Mechanism of Thyroid Hormone Action"

WONG, Sui-Lam, Ph.D., Department of Biological Sciences, Faculty of Science, University of Calgary "Gene Regulation and Secretion in *Bacillus Subtilis*"

** **WOODS**, Donald, Ph.D., Department of Microbiology & Infectious Diseases, Faculty of Medicine, University of Calgary "Pathogenesis of *Pseudomonas Aeruginosa* Disease"

WYSE, George, M.D., Ph.D., Departments of Medicine and Pharmacology and Therapeutics, Faculty of Medicine, University of Calgary "Patient Studies of Human Essential Hypertension and of Cardiac Dysrhythmias"

* **YAO**, Zemin, Ph.D., Department of Biochemistry, Faculty of Medicine, University of Alberta "Apolipoprotein B Expression: Structure and Function Studies"

YOKOYAMA, Shinji, M.D., Department of Medicine, Faculty of Medicine, University of Alberta "Mechanism of Reverse Cholesterol Transport"

YOUNG, Dallan, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Signal Transduction Pathways in the Fission Yeast Schizosaccharomyces Pombe and Mammals"

ZACKSON, Saul, Ph.D., Department of Medical Biochemistry, Faculty of Medicine, University of Calgary "Cellular and Molecular Analysis of a Morphogenetic Cell Migration"

* **ZERNICKE**, Ronald, Ph.D., Department of Surgery, Faculty of Medicine, University of Calgary "Functional Adaptation of Bone"

ZWIERS, Hindrik, Ph.D., Departments of Medical Physiology and Medical Biochemistry, Faculty of Medicine, University of Calgary "Neuropeptides, Phosphoproteins, and Neural Plasticity"

* New appointments 1991/92

** Cancelled

TABLE 1

NEW GRANTS AND AWARDS IMPLEMENTED FOR THE 1991/92 AWARD YEAR

NUMBER AND VALUE OF GRANTS AND AWARDS[1]

Award Category	U of A		U of C		Others		Total	
Studentship								
– Full-Time	$418,926	(34)	$276,197	(24)	$0		$695,123	(58)
– Part-Time	3,000	(1)	0		0		3,000	(1)
– Summer	468,000	(90)	208,000	(40)	26,000	(5)	702,000	(135)
Fellowship								
– Full-Time	545,495	(21)	170,725	(8)	203,035	(9)	919,255	(38)
– Part-Time	21,000	(3)	0		0		21,000	(3)
– Clinical	16,590	(1)	143,657	(3)	48,535	(2)	208,782	(6)
– Dental	0		0		0		0	
Clinical Investigator/ Establishment Grant	155,000	(1)	540,000	(3)	0		695,000	(4)
Scholarship/ Establishment Grant[2]	1,663,868	(8)	1,786,087	(8)	0		3,449,955	(16)
Heritage Medical Scientist Establishment Grant [3]	0	(4)	0		0		0	(4)
Independent Establishment Grant	211,000	(1)	0		0		211,000	(1)
Major Equipment Grant	343,075	(9)	98,672	(4)	0		441,747	(13)
Conference Grant	36,000	(4)	62,850	(9)	0		98,850	(13)
Visiting Scientist								
– To Alberta	15,000	(3)	33,300	(3)	0		48,300	(6)
– From Alberta	2,400	(1)	4,500	(1)	0		6,900	(2)
Visiting Professor	0		4,425	(3)	0		4,425	(3)
TOTALS	$3,899,354	(181)	$3,328,413	(106)	$277,570	(16)	$7,505,337	(303)

Notes:

1 Values shown are committed amounts. Because implementation dates vary, these figures differ from the audited statements.

2 Establishment grants not provided for Heritage Scientist award if previously supported as Scholars

3 Values shown are committed amounts for approved Establishment Grants only

For Full-Time Studentships and Full-Time, Part-Time, Clinical and Dental Fellowships amounts include Research Allowance

'Others' column includes Cross Cancer Institute

TABLE 2

SUMMARY OF APPLICATIONS RECEIVED AND PROCESSED – 1991/92 AWARD YEAR

NUMBER OF APPLICATIONS PROCESSED

Award Category	U of A				U of C				Others				Totals			
	Total	A	R	O	Total	A	R	O	Total	A	R	O	Total	A	R	O
Studentship																
– Full-Time	95	23	71	1	77	18	54	5	1	1	0	0	173	42	125	6
– Part-Time	3	1	2	0	0	0	0	0	0	0	0	0	3	1	2	0
– Summer	192	90	99	3	88	40	43	5	12	5	2	5	292	135	144	13
Fellowship																
– Full-Time	70	12	57	1	58	9	47	2	12	4	8	0	140	25	112	3
– Part-Time	3	1	2	0	2	0	2	0	0	0	0	0	5	1	4	0
– Clinical	7	3	4	0	4	3	1	0	7	3	3	1	18	9	8	1
– Dental	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0
Clinical Investigator/ Establishment Grant	2	1	1	0	6	3	3	0	0	0	0	0	8	4	4	0
Scholarship/ Establishment Grant	9	5	4	0	11	2	7	2	1	1	0	0	21	8	11	2
Heritage Scientist/ Establishment Grant	1	1	0	0	13	5	7	1	0	0	0	0	14	6	7	1
Independent Establishment Grant	4	0	4	0	3	1	2	0	0	0	0	0	7	1	6	0
TOTALS	386	137	244	5	262	81	166	15	34	15	13	6	682	233	423	26

A=Approved R=Rejected O=Withdrawn/Pending

AHFMR researchers lead the new McCaig Centre for Arthritis and Joint Injury Research jointly funded by AHFMR, the U of C and Calgary donors.

TABLE 3

GRANTS AND AWARDS RENEWED/CONTINUED – 1991/92

Award Category	U of A Total	U of C Total	Others Total	Totals
Studentship				
– Full-Time	55	60	0	115
– Part-Time	2	0	0	2
Fellowship				
– Full-Time	18	20	8	46
– Part-Time	0	0	0	0
– Clinical	1	2	5	8
– Dental	1	0	0	1
Clinical Investigator/ Establishment Grant	13	12	1	26
Scholarship/Establishment Grant	43	56	1	100
Heritage Medical Scientist/ Establishment Grant	10	12	1	23
TOTALS	143	162	16	321

* (1) Scholar supported for 1 month only; (5) Scholars supported for 3 months only; (1) Scholar supported for 9 months only

** (1) Scholar supported for 5 months only; (1) Scholar supported for 6 months only; (1) Scholar supported for 9 months only

\+ (1) Investigator supported for 4 months only

++ (1) Scientist supported for 4 months only

TABLE 4

TOTAL AWARDS ACTIVE ON MARCH 31, 1992

Award Category	U of A Total	U of C Total	Others Total	Totals
Clinical Investigator/ Establishment Grant	13	14	1	28
Heritage Scientist/ Establishment Grant	14	12	1	27
Heritage Scholarship/ Establishment Grant	40	65	1	106
TOTALS	67	91	3*	161

* Cross Cancer Institute Awards

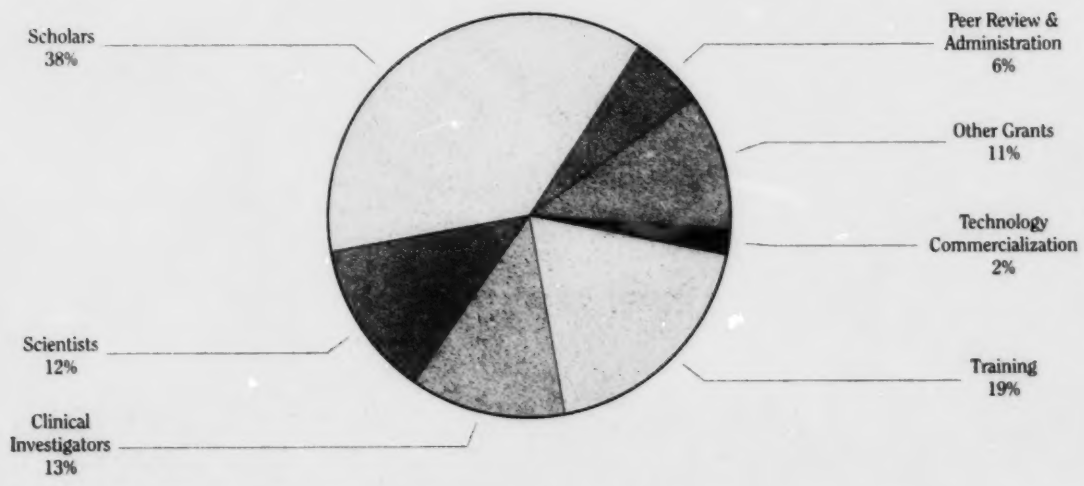
TABLE 5

TECHNOLOGY COMMERCIALIZATION PROGRAM – 1991/92

Applications	Received		Approved		Pending	
Phase 1	15	($359,754)	9	($219,855)	2	($42,400)
Phase 2	12	($767,776)	2	($146,370)	3	($190,000)
Phase 3*	11	($3,015,226)	3	($654,800)	5	($947,600)
TOTALS	38	($4,142,756)	14	($1,021,025)	10	($1,180,000)

* Phase 3 are funded under the Alberta Medical Innovations Plan.
Because implementation dates vary, these figures differ from the audited statements.

AHFMR EXPENDITURES FOR THE YEAR ENDED MARCH 31, 1992



HOW IS AHFMR FINANCED?

The Foundation operates on a portion of the interest revenue from an endowment fund. This endowment was established by the Government of Alberta in 1980 with an initial investment of $300 million. The remaining portion of the interest revenue earned each year is retained within the endowment to help maintain the value of the fund in terms of spending power. Valued at market, the endowment is currently worth $576 million but in terms of 1980 dollars, it is worth $294 million. The endowment is managed by Alberta Treasury and money is transferred to the Foundation during the year. $26 million was transferred during the current year.

HOW DOES THE FOUNDATION DECIDE HOW MUCH TO SPEND?

Final decisions for Foundation spending are made by the Trustees who weigh the mandate to support a balanced program of research that meets standards of excellence against available income, considering that a portion of the income must be added to the endowment to conserve purchasing power for the future.

In terms of the science, the Trustees rely on the advice of the peer review panels which judge applications (see page 9) and on the international Scientific Advisory Council (see page 8). In terms of fiscal policy, the Trustees look to the advice of financial experts and the experience and guidelines of many universities and other organizations supported by endowments.

HOW DOES THE FOUNDATION MANAGE FUNDS RECEIVED FROM THE ENDOWMENT?

Management maintains a system of internal accounting controls, external financial relationships, financial planning and forecasting models. Financial statements are prepared by management following generally accepted accounting principles and are independently audited by the Auditor General of Alberta. The information contained in the following financial statements is the responsibility of management. The Audit Committee of the Board of Trustees meets with management regularly to review financial results, annual budgets, and projections, and with the auditors annually to review the findings of the audit and approve the financial statements. The Audit Committee reports to the full Board of Trustees on a regular basis.

The audited financial statements of the Foundation which follow have changed in format from previous years to provide the reader with a clearer understanding of various program costs and to provide the Foundation with relevant information for future planning.

FINANCIAL STATEMENTS
MARCH 31, 1992

AUDITOR'S REPORT

To the Trustees of the Alberta Heritage Foundation for Medical Research

I have audited the balance sheet of the Alberta Heritage Foundation for Medical Research as at March 31, 1992 and the statements of revenue and expenditure – operating, revenue surplus – operating and revenue, expenditure and unexpended funds – Medical Innovation Program and changes in financial position for the year then ended. These financial statements are the responsibility of the Foundation's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the Foundation as at March 31, 1992 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles.

Donald D. Salmon

FCA
Auditor General

Edmonton, Alberta
August 12, 1992

BALANCE SHEET
MARCH 31, 1992

	1992	1991
ASSETS		
Cash	$ 7,298,002	$ 9,149,155
Accounts receivable	40,110	107,895
Advances and prepaid expenses (Note 4)	425,513	371,423
Mortgages receivable (Note 5)	291,959	459,374
Capital assets (Note 6)	258,367	135,686
Deferred pension costs (Note 7)	74,317	87,616
	$ 8,388,268	$ 10,311,149
LIABILITIES, SURPLUS AND UNEXPENDED FUNDS		
Accounts payable	$ 880,768	$ 1,591,250
Revenue surplus	2,697,796	3,647,497
Medical Innovation Program – unexpended funds (Note 8)	4,809,704	5,072,402
	$ 8,388,268	$ 10,311,149

The accompanying notes are part of these financial statements.

STATEMENT OF REVENUE AND EXPENDITURE – OPERATING

FOR THE YEAR ENDED MARCH 31, 1992

	1992	1991
REVENUE		
Transfers from the Alberta Heritage Foundation for Medical Research Endowment Fund (Note 3)	$ 26,000,000	$ 31,000,000
Interest	532,973	653,187
	26,532,973	31,653,187
EXPENDITURE		
Health care research	38,220	–
Personnel grants:		
Scholars	10,352,704	9,732,087
Scientists	3,412,899	3,952,960
Clinical investigators	3,498,595	3,592,818
Training grants:		
Students	2,772,288	2,608,228
Fellows	2,005,434	2,039,746
Clinical fellows	377,136	690,149
Other grants:		
Major equipment	1,045,453	863,480
Independent establishment	919,831	1,584,762
Institutional grants	557,705	1,575,408
Technology commercialization	421,031	408,610
Conference support	113,967	103,027
Special initiatives	112,285	31,557
Visiting scientists and professors	75,347	40,329
Technical workshop	74,608	185,353
Computer and library	-	113,767
Administration expenses, Schedule 1	1,705,171	1,410,046
	27,482,674	28,932,327
(Deficiency) excess of revenue over expenditure for the year	$ (949,701)	$ 2,720,860

STATEMENT OF REVENUE SURPLUS - OPERATING
FOR THE YEAR ENDED MARCH 31, 1992

	1992	1991
Revenue surplus at beginning of year	$ 3,647,497	$ 926,637
(Deficiency) excess of revenue over expenditure for the year	(949,701)	2,720,860
Revenue surplus at end of year	$ 2,697,796	$ 3,647,497

MEDICAL INNOVATION PROGRAM
STATEMENT OF REVENUE, EXPENDITURE AND UNEXPENDED FUNDS
FOR THE YEAR ENDED MARCH 31, 1992

	1992	1991
REVENUE		
Contributions from the Province of Alberta – General Revenue Fund	$ –	$ 2,333,000
Interest	468,878	626,261
	468,878	2,959,261
EXPENDITURE		
Projects funded	608,285	1,185,590
External reviews	45,371	–
Salaries and benefits	29,313	17,786
Legal and consulting	17,051	53,848
Public relations and advertising	16,548	2,820
Travel and accommodation	11,317	9,677
Office	2,907	1,092
Meeting expenses	784	–
	731,576	1,270,813
(Deficiency) excess of revenue over expenditure for the year	(262,698)	1,688,448
Unexpended funds at beginning of year	5,072,402	3,383,954
Unexpended funds at end of year	$ 4,809,704	$ 5,072,402

STATEMENT OF CHANGES IN FINANCIAL POSITION
FOR THE YEAR ENDED MARCH 31, 1992

	1992	1991
Operating activities:		
(Deficiency) excess of revenue over expenditure for the year - operating	$ (949,701)	$ 2,720,860
(Deficiency) excess of revenue over expenditure for the year - Medical Innovation Program	(262,698)	1,688,448
Non cash items:		
Amortization	38,236	47,407
Loss on disposal of office equipment	–	2,496
Decrease (increase) in accounts receivable	67,785	(93,712)
Decrease (increase) in mortgages receivable	167,415	(83,131)
Decrease (increase) in deferred pension costs	13,299	(15,278)
(Increase) decrease in prepaid expense and advances	(54,090)	166,071
Decrease in accounts payable	(710,482)	(2,975,648)
	(1,690,236)	1,457,513
Investing activities:		
Purchases of capital assets	(160,917)	(73,344)
(Decrease) increase in cash for the year	(1,851,153)	1,384,169
Cash at beginning of year	9,149,155	7,764,986
Cash at end of year	$ 7,298,002	$ 9,149,155

NOTES TO THE FINANCIAL STATEMENTS
MARCH 31, 1992

Note 1 Authority

The Alberta Heritage Foundation for Medical Research operates under the authority of the Alberta Heritage Foundation for Medical Research Act, Chapter A-26, Revised Statutes of Alberta 1980, as amended. The Foundation supports and promotes research in Alberta to improve health and thereby the quality of life of Albertans and people throughout the world.

NOTE 2 Significant Accounting Policies and Reporting Practices

Capital Assets and Amortization

Capital assets are shown at cost less accumulated amortization. Amortization is calculated on a straight-line basis at the following annual rates:

Furniture and office equipment	10%
Computer equipment	20%

Grants Expenditure

Grants and allowances awarded by the Trustees of the Foundation are recorded as expenditure when the awardee has been notified of the amount of the award and all terms and conditions of eligibility for payment of the award have been met. Exceptions to this policy are visiting lecturer and travel grants. These grants are included as institutional grant expenditure as costs are reported by recipients.

NOTE 3 Alberta Heritage Foundation for Medical Research Endowment Fund

The Endowment Fund operates pursuant to the Alberta Heritage Foundation for Medical Research Act and consists of an initial endowment of $300,000,000 from the Alberta Heritage Savings Trust Fund together with cumulative earnings thereon, less cumulative transfers to the Foundation.

Transfers to the Foundation are available at the request of the Trustees of the Foundation provided that such transfers do not result in the net assets of the Endowment Fund, valued at cost, being less than the initial endowment.

At March 31, 1992, the net assets of the Endowment Fund valued at cost were approximately $543,000,000 and valued at market were approximately $576,000,000.

NOTE 4 Advances and Prepaid Expenses

	1992	1991
Unexpended funds held by universities:		
Visiting lecturers' grants	$207,398	$154,801
Travel grants	147,815	187,997
Prepaid administration expenses	70,300	28,625
	$425,513	$371,423

NOTE 5 Mortgages Receivable

As part of the Foundation's housing assistance program, the President of the Foundation has been provided with a non-interest bearing mortgage of $125,000 which is repayable at $25,000 per year. The other mortgages are interest-bearing and are provided to researchers.

NOTE 6 Capital Assets

	1992	1991
Furniture and equipment at cost	$710,696	$550,976
Less: Accumulated amortization	452,329	415,290
	$258,367	$135,686

NOTE 7 Pension Plan

The Foundation's pension plan is a defined benefit plan. Benefits are based on years of service and average salary in the final years of employment.

Pension expense includes the amortization of experience gains and losses. These amounts are being amortized on a straight-line basis over periods between 14 - 19 years. The cumulative difference between the amounts expensed and the funding contributions is shown on the balance sheet as deferred pension costs.

The plan's status as at March 31, 1992 is as follows:

Assets	$ 397,000
Less: Actuarial value of accrued pension benefits	332,000
Excess balance	$ 65,000

NOTE 8 Medical Innovation Program

The Foundation administers funds for the Medical Innovation Program on behalf of the Minister of Technology, Research and Telecommunications. The program is scheduled to end March 31, 1996 at which time all unallocated and undisbursed funds will be returned to the Province of Alberta – General Revenue Fund.

NOTE 9 Commitments

As at March 31, 1992 the Foundation had committed $43,447,032 (1991 $32,495,565) for scientific programs:

Heritage medical scientist grants	$ 11,232,543
Scholarship grants	22,172,848
Clinical investigatorship grants	4,955,012
Training grants	3,840,516
Other programs	1,246,113
	$ 43,447,032

These commitments pertain to the following fiscal years:

1992-93	$ 20,543,174
1993-94	10,741,212
1994-95	6,074,482
1995-96	3,782,417
1996-97	1,933,592
1997-98	372,155
	$ 43,447,032

NOTE 10 Comparative Figures

The 1991 figures have been reclassified where necessary to conform to 1992 presentation.

NOTE 11 Approval of Financial Statements

These financial statements were approved by management.

SCHEDULE OF ADMINISTRATION EXPENSES
FOR THE YEAR ENDED MARCH 31, 1992

SCHEDULE 1

	1992	1991
Salaries and benefits	$ 641,941	$ 584,801
Other committees	172,026	140,032
Trustees	139,060	98,524
Scientific Advisory Council	132,896	102,046
Rent	123,864	38,910
Public relations and advertising	111,580	102,012
Consulting	107,823	56,196
Travel and meeting	54,879	36,265
Amortization	38,236	47,407
Office, stationery and printing	35,011	57,108
Postage and courier	23,798	32,354
Strategic planning	21,229	–
Telephone	19,930	18,484
Maintenance	19,580	28,943
Insurance	16,196	14,571
Legal	16,193	4,412
Professional development	10,356	1,105
Vehicle	7,987	7,433
Contracted employment	7,213	7,169
Recruitment	3,890	30,364
Miscellaneous	1,483	1,910
	$ 1,705,171	$ 1,410,046

OTHER AHFMR PUBLICATIONS AVAILABLE

"On the Edge of Discovery" The Third Triennial Report
An overview of the first nine years

"Moving Forward" The AHFMR Strategic Planning Report
A summary of the 1992 strategic planning process

AHFMR Newsletters
Stories about researchers' recent discoveries
Published five times a year

AHFMR Technology Commercialization Newsletter
A review of projects funded
Published twice a year

Last year, AHFMR researchers received $11.4 million in external funding from other organizations and agencies.